UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,765	08/18/2003	Andrew B. Hastings	1376.725US1	3874

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EXAMINER
MCLEAN MAYO, KIMBERLY N

ART UNIT	PAPER NUMBER
2187	

MAIL DATE	DELIVERY MODE
07/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)
	10/643,765	HASTINGS, ANDREW B.
	Examiner	Art Unit
	Kimberly N. McLean-Mayo	2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _25 April 2007_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-22, 25-27 and 30-44_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _5, 9, 16 and 37-40_ is/are allowed.

6)☒ Claim(s) _1, 2, 6-8, 10-13, 17, 18, 20-22, 25-27, 30-36 and 41_ is/are rejected.

7)☐ Claim(s) _3, 4, 14, 15, 19 and 42-44_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   The enclosed detailed action is in response to the Amendment submitted on April 25,

2007.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-2, 6-8, 10-13, 17-18, 20-22, 25-27, 30-36 and 41 are rejected under 35

U.S.C. 102(e) as being anticipated by Kolichtchak (PGPUB: US 2003/0014667).

Regarding claims 1-2, 10-13, 21-22, 27, 32-35 and 41, Kolichtchak discloses a system

comprising a memory (Figure 1, Reference 110); a plurality of pages held in the memory

(section 0009); an instruction translation lookaside buffer (ITLB) (Figure 1, Reference 190); a

fist data translation lookaside buffer (DTLB) (Figure 1, Reference 180); a translation lookaside

buffer [inherent; when a miss occurs in the ITLB, a miss handler [software/code] retrieves the

entry from the page table and when a miss occurs in the DTLB a miss handler retrieves the

missed page entry from the page table); an executable/non-executable (x) indicator

[user/supervisory mode] associated with each page in memory (Figure 2, bit 2; section 0011)

wherein the TLB miss handler sets the x-indicator for a particular page to indicate non-

executable when that page is accessed in a mode that allows writing to that page, and wherein the

ITLB refuses to allow instructions from a page with an associated x-indicator of non-executable to be loaded [section 0014].

Regarding claims 6, 8, 18, and 20, Kolichtchak discloses a write bit associated with each page in memory that indicates the respective page is writable (Figure 2, bit 1; section 0011)

Regarding claims 7 and 17, Kolichtchak discloses a page table used to translate a virtual address to a real address, wherein the x-indicator for each page is held in the page table entry associated with that page (Figure 2, bit 2; section 0011).

Regarding claims 25-26, 30-31 and 36, Kolichtchak discloses translating the address for the data access also including setting the non-executable indication for a page holding the data access address on if a write indication is set for that page (Figure 3, Reference 310).

Allowable Subject Matter

4.   Claims 5, 9, 16 and 37-40 are allowed.

5.   Claims 3-4, 14-15, 19 and 42-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6.   Applicant's arguments with respect to claims 3-4, 14-15 and 42-44 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's remaining arguments were presented in the previous response; the Examiner has reiterated the following points below.

The Applicant provides arguments, which are incommensurate with the claims. For example, the Applicant argues that Kolichtchak's use of the U/S flag is unconventional, etc.

The Applicant argues that Kolichtchak's U/S flag is not an execute/non-execute bit since if the U/S flag is marked supervisor and the processor in supervisor mode, it does not cause the ITLB to refuse to allow instructions to be loaded or executed. The Examiner disagrees, claims are examined given the broadest reasonable interpretation. In this case, Kolichtchak teaches that when a page is non-executable the privilege is set to supervisor mode which prevents execution of the page (loading, etc.) by users having a *user privilege* only. Hence, Kolichtchak refuses access to those pages by users having only a *user privilege* (refer to section 0011; lines 18-21; section 0014).

Regarding claims 7 and 17, the U/S flag is the x-indicator.

Regarding Applicant's arguments with respect to claims 21 and 27, the Examiner disagrees. Data address translation occurs when the system accesses the address and corresponding entry in the page table is accessed to retrieve the physical address. When the page table entry is accessed, the accessed entry is written into the DTLB where the non-executable indication is set by writing the value of indicator in the DTLB.

Additionally, the Examiner has cited equivalent structure, material or acts as provided above for Applicant's means-plus-function claims.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly N. McLean-Mayo whose telephone number is 571-272-4194. The examiner can normally be reached on Monday-Friday (10-6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571-272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
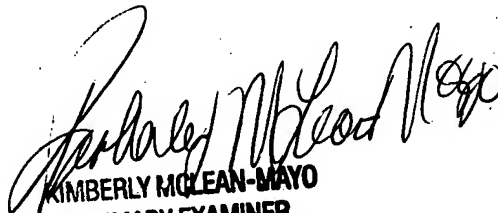
Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly N. McLean-Mayo
Primary Examiner
Art Unit 2187

KNM

KIMBERLY MCLEAN-MAYO
PRIMARY EXAMINER

July 9, 2007